

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

690 Walnut Ave.St. 150

Vallejo, CA 94592-1133

(707) 649-5453

(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-026829**Date Inspected:** 07-Dec-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Fred Von Hoff**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Sections**Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above.

This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and monitor American Bridge/Fluor (ABF) welding operations on the Self Anchored Suspension (SAS) Tower and Orthotropic Box Girder (OBG) sections. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

SAS – Tower – F.W. Spencer:

This QA Inspector observed F.W. Spencer personnel were on site this shift and working. This QA Inspector was informed QC Inspector Steve Jensen had been assign to monitor the work at this location during the shift. This QA Inspector observed F.W. Spencer would be working on the 2-inch water line piping for the tower. This QA Inspector periodically observed QC Inspector Steve Jensen monitoring the fit up and welding and was informed of the following welding parameters for the 1/8-inch diameter E6010 used for the root pass and the 3/32-inch E7018 used for the fill and cover passes; XX amperes for the 1/8-inch E6010 and XX amperes for the 3/32-inch E7018. QC Inspector Steve Jensen informed this QA Inspector he had inspected and accepted the fit up and final visual weld on the following weld joint; 15/2/T/80, 16/2/T/74 and 17/2/T/68. This QA Inspector performed a visual verification of weld joint 17/2/T/68.

OBG sections:

13E/14E-weld joint I (SPCM) Repairs: This QA Inspector observed ABF welding personnel Xiao Jian Wan

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(#9677) performing Shielded Metal Arc Welding (SMAW) at a repair excavation located at Y-1600. QC Inspector Fred Von Hoff informed this QA Inspector the excavation was 140 mm long, 30 mm wide and 11 mm deep. This QA Inspector observed QC Inspector Fred Von Hoff verify the following welding parameters; 135 amperes. This QA Inspector observed the Post Weld Heat Treatment (PWHT) started at approximately 0845 hours this shift and was informed by QC Inspector Fred Von Hoff the PWHT would be held for 1-hour. The work observed by this QA Inspector appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-1004 Repair.

13E/14E-weld joint D-1 (SPCM) Repairs: This QA Inspector observed ABF welding personnel Wai Kitlai (#2953) setting up to begin a repair weld at Y-7890. This QA Inspector observed ABF welding personnel Wai Kitlai (#2953) preheat the base metal prior to using the carbon arc process to excavate the repair area. This QA Inspector observed QC Inspector Fred Von Hoff perform a visual and Magnetic Particle Testing (MT) on the excavation and then informed this QA Inspector he had accepted both inspections. This QA Inspector performed a visual verification and observed the excavation was 150 mm long, 25 mm side and 17 mm deep. This QA Inspector observed QC Inspector Fred Von Hoff verify the following welding parameters for ABF welding personnel Wai Kitlai (#2953) 137 amperes. The welding observed by this QA Inspector appeared to comply with ABF-WPS-D15-1004 Repair. This QA Inspector observed there appeared to be an issue with the PWHT and checked the temperature observing the temperature had dropped to 250°F. This QA Inspector informed QC Inspector Fred Von Hoff the temperature was below the minimum preheat temperature of 325°F and was informed that he would take care of the issue. This QA Inspector requested that QC Inspector Fred Von Hoff check the temperature of the PWHT approximately 20 minutes later and observed the temperature had dropped to approximately 150°F. This QA Inspector continued to monitor the issue and observed the temperature was increased to the minimum preheat temperature and then to the minimum PWHT temperature of 450°F. The total time the area was below 325°F after welding was approximately 45 minute. This QA Inspector informed QC Inspector Fred Von Hoff and Lead QC Inspector Bonifacio Daquinag Jr. that a Non Conformance Report (NCR) needed to be issued because the minimum preheat temperature was not maintained prior to the start of the PWHT, both concurred regarding this issue. Later this shift QC Inspector Fred Von Hoff informed this QA Inspector the PWHT had been completed.

At Y-6170 this QA Inspector observed QC Inspector John Pagliero performing Ultrasonic Testing (UT) and was informed that this repair area (Y-6170) was rejected again. This QA Inspector was informed by ABF welding Foreman James Zhen (#6001) the excavation would be performed from outside the OBG section (Face B). This QA Inspector was aware the first time repair had been performed from this same face and confirmed this with QC Inspectors John Pagliero and Fred Von Hoff. This QA Inspector observed ABF welding personnel Wai Kitlai (#2953) preheat the repair area with a hand held gas torch prior to using the carbon arc process to excavate the repair (R-2) area. ABF welding personnel Wai Kitlai (#2953) stopped at a depth of approximately 18 mm and informed QC Inspectors John Pagliero and Fred Von Hoff and this QA Inspector he had found the defect; a slag line. See photo below of the excavation with the slag line. ABF welding personnel Wai Kitlai (#2953) continued using the carbon arc process and then proceeded grinding with a radius bur. This QA Inspector observed as QC Inspector Fred Von Hoff performed a visual and MT inspection of the excavation and then informed this QA Inspector he had accepted both the inspections. This QA Inspector performed a visual verification and observed the excavation appeared to be clear of any defects and approximately 115 mm long, 25 mm side and 23 mm deep (greater than 65% of the base metal). This QA Inspector was informed by Lead QA Inspector Bonifacio Daquinag Jr. that work would be stopped at this time and a request to proceed with the repair would be submitted for Engineering approval. The excavation work appeared to comply with ABF-WPS-D15-1004 Repair.

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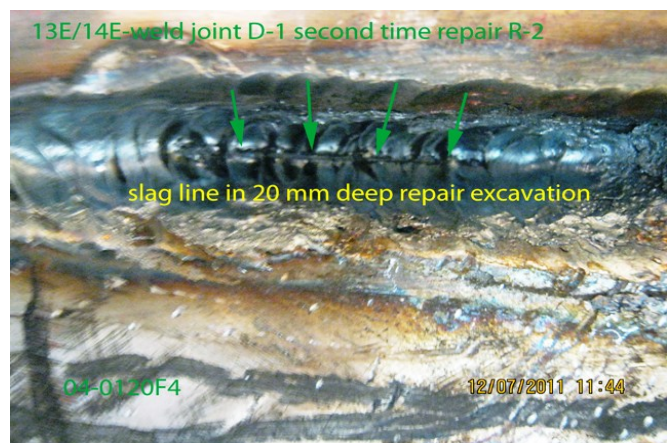
This QA Inspector observed a heated electrode container marked “9018” on the scaffolding between ABF welding personnel Xiao Jian Wan (#9677) and Wai Kitlai (#2953). This QA Inspector performed a random visual verification of the contents and observed both 7018 and 9018 electrodes in the container and notified QC Inspector Fred Von Hoff of the observation. QC Inspector Fred Von Hoff informed this QA Inspector he had visually checked the electrodes taken from the container to be classified as 7018. This QA Inspector informed QC Inspector Fred Von Hoff only 9018 electrodes (as marked) should be stored in the container because the wrong electrode could accidentally be used. This QA Inspector observed QC Inspector Fred Von Hoff had a conversation with ABF welding Foreman James Zhen (#6001) and later observed the markings on the container had been changed to “7018” and observed QC Inspector Fred Von Hoff perform a visual inspection verifying each electrode was a 7018 classification.

13E/14E-weld joint E-1 and E-2: This QA Inspector had been informed by QC Inspector Fred Von Hoff the fit up of this weld joint appeared to have shifted after it was initially checked and this shift, which appeared to be a range of several weeks. QC Inspector Fred Von Hoff stated ABF welding personnel Xiao Jian Wan (#9677) and James Zhen (#6001) were working on correcting the offset at several locations. QC Inspector Fred Von Hoff informed this QA Inspector he had inspected the fit up and accepted the work. This QA Inspector performed a visual verification of the fit up offset and observed it to be within 2 mm. This QA Inspector observed ABF personnel were using a grinder to increase the root opening at various locations. The grinding at this location was not completed by the end of the shift this date.

This QA Inspector verbally informed QA SPCM Lead Inspector, Daniel Reyes, of the issues noted in this report for compliance therefore for further details of issues of significance see QA SPCM Lead Inspector, Daniel Reyes, Daily Inspection Report (6031) for this date.

Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) and Caltrans personnel during this shift. Except as described above and noted above there were no notable conversations.



Comments

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This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

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| Inspected By: | Hager,Craig |
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| Quality Assurance Inspector |
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| Reviewed By: | Levell,Bill |
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| QA Reviewer |
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